



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/070,908	07/12/2002	Makoto Yoneya	220523US0PCT	2995
22850	7590	08/06/2004	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			NGUYEN, HOAN C	
			ART UNIT	PAPER NUMBER
			2871	

DATE MAILED: 08/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/070,908

Applicant(s)

YONEYA ET AL.

Examiner

HOAN C. NGUYEN

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 May 2004.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
4a) Of the above claim(s) 7-11 and 17-20 is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-6 and 11-16 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4/13/02.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Applicant's election with traverse of Species A and subspecies I (claims 1-7 and 11-16; Figs. 1-5 and 11) in Paper on 17 May 2004 is acknowledged.

Applicant's arguments regarding the restriction requirement have been considered; however, the traversal was on the grounds that there is no serious burden on the Examiner in examining all of claims together. This is not found persuasive since species A-D and subspecies are not obvious variation. However, applicant admits different embodiments corresponding to different drawings.

Therefore, the requirement is deemed proper and is considered to be final.

Claim 11 cites a feature: "a light reflection plate is disposed on one of the pair of substrates" that does not disclose in Figs. 1-5 corresponding to the elected species. This feature discloses in Fig. 10 corresponding to nonelected 4th species.

Claims 7-11 and 17-20 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected inventions and species, there being no allowable generic or linking claim. Therefore, ONLY claims 1-6 and 11-16 are pending in the elected Species.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1-6 and 12-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Kim et al. (US6091471A).

In regard to claims 1 and 2, Kim et al. teach (Figs. 10-14) a liquid crystal display device comprising

- a pair of substrates, at least one of which is inherently transparent for transmitting light through LC cell so that light can be modulated;
- a group of electrodes of a In-Plane Switching (col. 6 line 32) mode liquid crystal cell as inherently
 - formed on at least one of the pair of substrates and
 - adapted to apply an electric field to a liquid crystal layer disposed between the pair of substrates,

wherein the electric field inherently having a component substantially parallel to the surfaces of the substrates due to a In-Plane Switching (IPS) mode liquid crystal cell;

- an alignment layer
 - disposed between the liquid crystal layer and at least one of the pair of substrates and

- having been subjected to liquid crystal anchoring treatments (col. 5 lines 53-55) in two directions,

wherein the liquid crystal display device being characterized in that the two liquid crystal anchoring directions of the alignment layer form an angle of about 90° as Fig. 14a-c on the corresponding substrate surface; and

- a rising angle (pretilt angle) in one liquid crystal anchoring direction with respect to the corresponding substrate surface is substantially zero (less than 5° , col. 1 line 35-36), and
- a rising angle in the other liquid crystal anchoring direction with respect to the corresponding substrate surface is not substantially zero (more 60° , col. 1 lines 32-34).

Wherein

Claims 3 and 12:

- at least one of the liquid crystal anchoring treatments in the plural directions is a process for performing uniform anchoring treatment over an entire target area in each of the directions as shown (col. 2 lines 31-34).

Claims 4 and 13:

- at least one of the liquid crystal anchoring treatments in the plural directions is a process for dividing an entire target area into plural sub-areas corresponding to the plural directions and performing anchoring treatment in each of the sub-areas in the corresponding direction (col. 2 lines 14-20).

Claims 5 and 14:

- at least one of the liquid crystal anchoring treatments in the plural directions is a process for irradiating the alignment layer with linearly polarized light that can cause a chemical reaction on the surface of the corresponding substrate (col. 2 lines 21-27).

Claims 6 and 15:

- at least one of the liquid crystal anchoring treatments in the plural directions is a process for scanning the alignment layer with a probe that can impart stress to the surface of the corresponding substrate (mechanical rubbing with friction on alignment layers as shown in Fig. 11a).

Claims 7 and 16:

- at least one of the liquid crystal anchoring treatments in the plural directions is a process for scanning the alignment layer with light that can cause a chemical reaction on the surface of the corresponding substrate (inherency).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Yoneya et al. (US 5928733 A) disclose an active-matrix liquid crystal display device employing the in-plane switching mode characterized by weak torsional anchoring of the liquid crystal molecules and the alignment layer surface at the liquid crystal/alignment layer interface to an extent that the extrapolation length which expresses the strength of said torsional anchoring will become not less than 10% of the gap between the substrates.

Mamada et al. (US 6628360 B2) disclose a liquid crystal display device including liquid crystal layer having liquid crystal molecules homogeneously aligned. The stability of the homogenous molecule alignment of the liquid crystal layer depends upon the anchoring of the alignment film and the natural cohesive power of the nematic liquid crystal.

Komatsu (US 5986735 A) discloses an In-plane switching mode liquid crystal display with alignment layers of different anchoring energies.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HOAN C. NGUYEN whose telephone number is (571) 272-2296. The examiner can normally be reached on MONDAY-THURSDAY:8:00AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim H Robert can be reached on (571) 272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

HOAN C. NGUYEN
Examiner

Art Unit 2871

chn



TARIFUR R. CHOWDHURY
PRIMARY EXAMINER